

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094503 A3(51) International Patent Classification:
G01B 9/02 (2006.01)

[US/US]; 175 Freeman Street, Apt. 902, Brookline, MA 02446 (US).

(21) International Application Number:
PCT/US2005/009726

(74) Agents: GAGNEBIN, Charles, L., III et al.; Weingarten, Schurgin, Gagnebin & Lebovici, LLP, Ten Post Office Square, Boston, MA 02109 (US).

(22) International Filing Date: 23 March 2005 (23.03.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/555,427 23 March 2004 (23.03.2004) US(71) Applicant (for all designated States except US):
TRUSTEES OF BOSTON UNIVERSITY [US/US];
One Sherborn Street, Boston, MA 02215 (US).

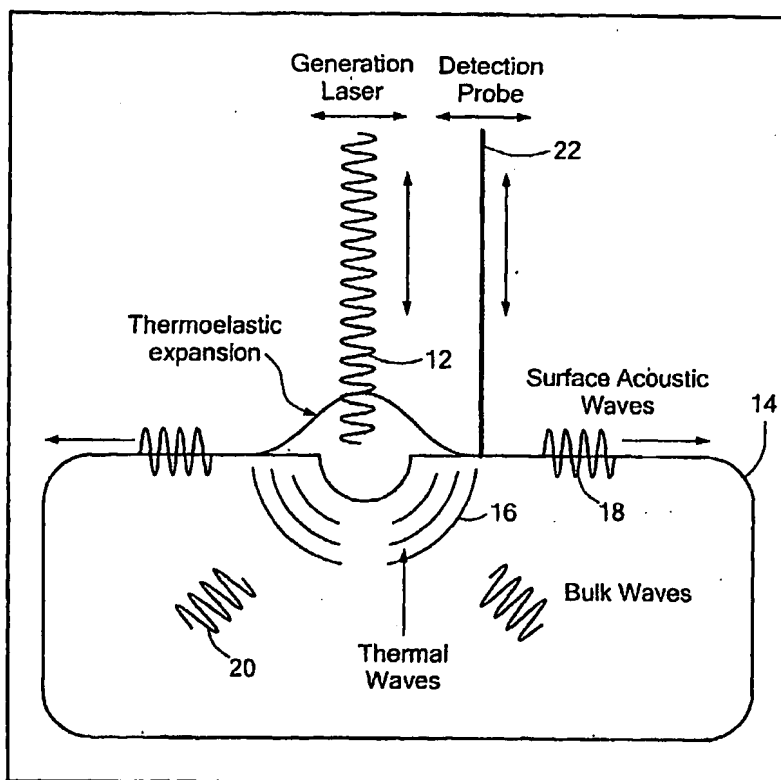
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

(72) Inventor; and

(75) Inventor/Applicant (for US only): MURRAY, Todd, W.

[Continued on next page]

(54) Title: CHARACTERIZATION OF MICRO- AND NANO SCALE MATERIALS BY ACOUSTIC WAVE GENERATION WITH A CW MODULATED LASER



(57) Abstract: An acoustic wave generating laser beam (12) is amplitude modulated with continuous wave modulation of a frequency in the megahertz to gigahertz range and an optical system directs the modulated radiation to a surface of a thin surface layer (14). This in turn causes an acoustic wave (16, 18, 20) that is sensed and analyzed to provide an indication of properties of the thin surface layer



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

(88) Date of publication of the international search report:

3 August 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.